

## **REMARKS**

### **Status of the Claims**

Claims 1, 3, 5, 8-9, and 11-17 will be pending in the above-identified application upon entry of the present amendment. Claim 1 has been amended by incorporating the subject matter of claims 2, 4, and 6. As such, claims 2, 4, and 6 have been cancelled herein. Claims 3, 5, 8, and 15 have been amended in view of the incorporation of claim 2 into claim 1. Thus, no new matter has been added. Based upon the above considerations, entry of the present amendment is respectfully requested.

In view of the following remarks, Applicants respectfully request that the Examiner withdraw all rejections and allow the currently pending claims.

### **Information Disclosure Citation**

Applicants thank the Examiner for considering the references supplied with the Information Disclosure Statement filed February 24, 2010 and for providing Applicants with an initialed copy of the PTO-SB08 form filed therewith.

### **Double Patenting**

Claims 1, 6, 9, and 11-17 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-2, 5, 8, 12, 15-17, and 19-22 of U.S. Patent No. 7,374,699. Applicants respectfully traverse.

As amended, claim 1 recites the subject matter of claims 2 and 4, which were not included in this rejection. As such, the obviousness-type double patenting rejection has been overcome and should be withdrawn.

### **Issues under 35 U.S.C. § 103**

Claims 1-6, 8-9 and 11-17 are rejected under 35 U.S.C. § 103(a) as being obvious over Yamamuro '875 (EP 1266875) in view of Smith '939 (US 4,393,939). Applicants respectfully traverse. Reconsideration and withdrawal of this rejection are respectfully requested based on the following considerations.

Legal Standard for Determining Prima Facie Obviousness

MPEP 2141 sets forth the guidelines in determining obviousness. First, the Examiner has to take into account the factual inquiries set forth in *Graham v. John Deere*, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), which has provided the controlling framework for an obviousness analysis. The four *Graham* factors are:

- (a) determining the scope and content of the prior art;
- (b) ascertaining the differences between the prior art and the claims in issue;
- (c) resolving the level of ordinary skill in the pertinent art; and
- (d) evaluating any evidence of secondary considerations.

*Graham v. John Deere*, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966).

Second, the Examiner has to provide some rationale for determining obviousness. MPEP 2143 sets forth some rationales that were established in the recent decision of *KSR International Co. v Teleflex Inc.*, 82 USPQ2d 1385 (U.S. 2007). Exemplary rationales that may support a conclusion of obviousness include:

- (a) combining prior art elements according to known methods to yield predictable results;
- (b) simple substitution of one known element for another to obtain predictable results;
- (c) use of known technique to improve similar devices (methods, or products) in the same way;
- (d) applying a known technique to a known device (method, or product) ready for improvement to yield predictable results;
- (e) “obvious to try” – choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success
- (f) known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations are predictable to one of ordinary skill in the art;
- (g) some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention.

As the MPEP directs, all claim limitations must be considered in view of the cited prior art in order to establish a *prima facie* case of obviousness. See MPEP 2143.03.

Distinctions over the Cited References

As the Examiner admits, Yamamuro '875 fails to disclose the cationic polymer (C) of the present invention. The cationic polymer (C) produces unexpectedly superior results. Specifically, the present specification recites:

When the surfactant composition of the present invention is used for a slurry rheology modifier, a combination of the compounds (A) and (B) and the cationic polymer (C) produces such an excellent rheology modifying effect on even a slurry containing clay. Although not wanting to be limited by theory, the reason is as follows: Specifically, in the slurry in which clay exists, compound (A) adsorbs to the clay and there is therefore the case where the formation of string-like micelles which serve to modify rheology is inhibited. However, if the cationic polymer (C) exists like the case of the present invention, the adsorption of the cationic polymer (C) to clay can be prevented because the cationic polymer (C) adsorbs to clay more easily than compound (A). Also, the adsorption of the cationic polymer (C) to clay causes the coagulation of clay particles and also, the surface area of clay is reduced, ensuring that the amount of compound (A) to be adsorbed to clay can be reduced. As a result, string-like micelles (huge micelle associated body) produced by the compounds (A) and (B) are formed sufficiently and therefore, the original effects of the compounds (A) and (B) are maintained.

It is considered that the present invention can prevent compound (A) from adsorbing to clay by the aid of the cationic polymer (C) in the case where sufficient rheology modifying effect is not obtained because of the adsorption of compound (A) to clay, and therefore, rheology modification can be accomplished even in the case where substances having the ability to adsorb compound (A) are present besides the clay (page 16, line 5 to page 17, line 4).

The claimed density of the cationic polymer (C) also produces unexpectedly superior results. Specifically, the present specification recites:

As to the index of the ability to adsorb compound (A), it is preferable to apply the present invention to materials having a chemical equivalent of 0.1 meq or more (0.1 meq/100 g or more) to compound (A) per 100 g. Materials having a chemical equivalent of 1 to 10 meq/100 g in particular have a difficulty in obtaining an intended rheology modifying effect even if the amount of compound (A) to be added is significantly increased. Therefore, the present invention is preferable in such a case. The chemical equivalent of a material to compound (A) can be measured by the method described in the examples which will be explained later (page 17, lines 5-15).

The Examiner appears to consider the above evidence moot in view of the new grounds of rejection. However, the present invention only needs to be compared with the closest prior art and not a combination of references (MPEP 716.02(e)(III)). As further support for the arguments above, enclosed herewith is a 37 CFR § 1.132 Declaration of Hotaka Yamamuro, one of the present inventors. The Examiner is respectfully requested to review the enclosed Declaration of Hotaka Yamamuro as it provides strong evidence of the patentability of the present invention.

In the enclosed Declaration, inventive products containing cationic polymer (C) are compared with comparative products without cationic polymer (C). The present invention is shown to be unexpectedly superior in terms of stable viscosities and lack of segregation in the slurry. The Comparative Products strongly evidence that Yamamuro '875, which does not disclose cationic polymer (C) of the present invention, does not produce the results of the present invention.

In order to overcome the deficiencies of Yamamuro '875 as discussed above, the Examiner relies on Smith '939. However, these references are not properly combinable and actually teach away from each other. Regarding Yamamuro '875, the slurry rheology modifier in Yamamuro '875 increases the viscosity of the slurry (paragraphs [0009], [0056], and [0177]).

In contrast, Smith '939 recites, "At levels of 0.1% to 1.0% of the dry cement weight the fluid loss additives carboxymethylhydroxyethyl cellulose and poly(acrylamide-co-2-acrylamido-2-methylpropane sulfonic acid) reduced the fluid loss of the cement slurry by 88-99%" (Example 2; col. 18, lines 38-42; emphasis added). Furthermore, Smith '939 recites, "In contrast, the presence of the same concentration of cationic organic polymers...in the cement slurry produced effluents which did not damage the permeability of clayey sand packs and stabilized the clays as indicated by flow rate data from tests 9, 12, and 14 summarized in Table IV" (Example 3, col. 20, lines 23-31; emphasis added). In other words, if the effluent has a high viscosity, the effluent blocks off empty space of the clay in subterranean formations. As such, Smith '939 prefers to decrease the viscosity of the slurry.

According to MPEP 2143.01, the combination of references cannot change the principle of operation of the primary reference or render the reference inoperable for its intended purpose. Since the slurry rheology modifier in Yamamuro '875 increases the viscosity of the slurry, it is improper to combine Yamamuro '875 with Smith '939 since Smith '939 prefers to decrease the viscosity of the slurry. Therefore, a *prima facie* case of obviousness has not been established, and withdrawal of the outstanding rejection is respectfully requested.

To establish a *prima facie* case of obviousness of a claimed invention, all of the claim limitations must be disclosed by the cited references. As discussed above, Yamamuro '875 in view of Smith '939 fail to disclose all of the claim limitations of independent claim 1, and those claims dependent thereon. Accordingly, the combination of references does not render the present invention obvious.

Furthermore, the cited references or the knowledge in the art provide no reason or rationale that would allow one of ordinary skill in the art to arrive at the present invention as claimed. Therefore, a *prima facie* case of obviousness has not been established, and withdrawal of the outstanding rejection is respectfully requested. Any contentions of the USPTO to the contrary must be reconsidered at present.

### **Conclusion**

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Chad M. Rink, Registration No. 58,258, at the telephone number of the undersigned below to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Director is hereby authorized in this, concurrent, and future replies to charge any fees required during the pendency of the above-identified application or credit any overpayment to Deposit Account No. 02-2448.

Dated: July 12, 2010

Respectfully submitted,

By 

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Attachment: 37 CFR § 1.132 Declaration of Hotaka Yamamuro